

Ibrahim 10/069,098

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(FILE 'MEDLINE, HCAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT  
15:13:58 ON 11 AUG 2003)

L25 47 DUP REM L24 (16 DUPLICATES REMOVED)

=> d que 125

L1 5416 SEA ROGERS S?/AU  
L2 2 SEA L1 AND MONOCOT(A) PLANT#  
L3 25497 SEA REGENERAT?(5A) PLANT#  
L4 12424 SEA SHOOT#(5A) DEVELOP?  
L5 29657 SEA ROOT#(5A) DEVELOP?  
L6 307 SEA L3 AND L4 AND L5  
L7 15 SEA L6 AND MONOCOT?  
L8 1540 SEA L3 AND L4  
L9 1 SEA L8 AND (FRESHWATER OR FRESH(3A) WATER) (3A) MONOCOT?  
L12 8 SEA L3 AND (FRESHWATER OR FRESH(3A) WATER) (3A) MONOCOT?  
L13 32 SEA REGENERAT?(5A) (CAREX OR SCIRPUS OR JUNCUS OR TYPHA)  
L14 51 SEA L2 OR L7 OR L9 OR L12 OR L13  
L15 19 SEA REGENERAT? AND CALLUS AND (CAREX OR SCIRPUS OR JUNCUS OR  
TYPHA)  
L16 7 SEA TISSUE(3A) CULTUR?(5A) (CAREX OR SCIRPUS OR JUNCUS OR  
TYPHA)  
L17 0 SEA SOMATIC(3A) EMBRYO# (5A) (CAREX OR SCIRPUS OR JUNCUS OR  
TYPHA)  
L18 3 SEA SOMATIC(3A) EMBRYO# AND (CAREX OR SCIRPUS OR JUNCUS OR  
TYPHA)  
L24 63 SEA (L14 OR L15 OR L16 OR L17 OR L18 OR L19 OR L20 OR L21 OR  
L22 OR L23)  
L25 47 DUP REM L24 (16 DUPLICATES REMOVED)

=> d ibib abs 125 1-47

L25 ANSWER 1 OF 47 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
ACCESSION NUMBER: 2003:324103 SCISEARCH  
THE GENUINE ARTICLE: 665MB  
TITLE: In situ FTIR assessment of desiccation-tolerant tissues  
AUTHOR: Wolkers W F (Reprint); Hoekstra F A  
CORPORATE SOURCE: Univ Calif Davis, Dept Mol & Cellular Biol, Davis, CA  
95616 USA; Univ Wageningen & Res Ctr, Lab Plant Physiol,  
Grad Sch Expt Plant Sci, NL-6703 BD Wageningen,  
Netherlands  
COUNTRY OF AUTHOR: USA; Netherlands  
SOURCE: SPECTROSCOPY-AN INTERNATIONAL JOURNAL, (MAR 2003) Vol. 17,  
No. 2-3, pp. 297-313.  
Publisher: IOS PRESS, NIEUWE HEMWEG 6B, 1013 BG AMSTERDAM,  
NETHERLANDS.  
ISSN: 0712-4813.  
DOCUMENT TYPE: Article; Journal  
LANGUAGE: English  
REFERENCE COUNT: 77

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB This essay shows how Fourier transform infrared (FTIR)  
microspectroscopy can be applied to study thermodynamic parameters and  
conformation of endogenous biomolecules in desiccation-tolerant biological  
tissues. Desiccation tolerance is the remarkable ability of some organisms  
to survive complete dehydration. Seed and pollen of higher plants are well  
known examples of desiccation-tolerant tissues. FTIR studies on the

overall protein secondary structure indicate that during the acquisition of desiccation tolerance, plant embryos exhibit proportional increases in alpha-helical structures and that beta-sheet structures dominate upon drying of desiccation sensitive-embryos. During ageing of pollen and seeds, the overall protein secondary structure remains stable, whereas drastic changes in the thermotropic response of membranes occur, which coincide with a complete loss of viability. Properties of the cytoplasmic glassy matrix in desiccation-tolerant plant organs can be studied by monitoring the position of the OH-stretching vibration band of endogenous carbohydrates and proteins as a function of temperature. By applying these FTIR techniques to maturation-defective mutant seeds of *Arabidopsis thaliana* we were able to establish a correlation between macromolecular stability and desiccation tolerance. Taken together, in situ FTIR studies can give unique information on conformation and stability of endogenous biomolecules in desiccation-tolerant tissues.

L25 ANSWER 2 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 ACCESSION NUMBER: 2003:313537 BIOSIS  
 DOCUMENT NUMBER: PREV200300313537  
 TITLE: Transformation and **regeneration** of wetland  
 monocot **Juncus** *acuminatus* using different binary  
 vectors.  
 AUTHOR(S): Chen, L. (1); Nandakumar, R. (1); Lai, P. K. (1); Rogers,  
 S. M. D. (1)  
 CORPORATE SOURCE: (1) Bioscience Department, Salem International University,  
 Salem, WV, 26426, USA: rogers@salemiu.edu USA  
 SOURCE: In Vitro Cellular & Developmental Biology Plant, (Spring  
 2003, 2003) Vol. 39, No. Abstract, pp. 21-A. print.  
 Meeting Info.: Congress on In Vitro Biology Portland,  
 Oregon, USA May 31-June 04, 2003 Society for In Vitro  
 Biology  
 . ISSN: 1054-5476.  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English

L25 ANSWER 3 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 DUPLICATE 1  
 ACCESSION NUMBER: 2003:171828 BIOSIS  
 DOCUMENT NUMBER: PREV200300171828  
 TITLE: **Tissue culture** and wetland  
 establishment of the **freshwater monocots**  
**Carex, Juncus, Scirpus, and**  
**Typha.**  
 AUTHOR(S): Rogers, Suzanne M. D. (1)  
 CORPORATE SOURCE: (1) Department of Bioscience, Salem International  
 University, Salem, WV, 26426-0500, USA: rogers@salemiu.edu  
 USA  
 SOURCE: In Vitro Cellular & Developmental Biology Plant, (January  
 February 2003) Vol. 39, No. 1, pp. 1-5. print.  
 ISSN: 1054-5476.  
 DOCUMENT TYPE: Article  
 LANGUAGE: English

AB Cell **cultures** of **freshwater** wetland **monocots**  
 were **regenerated**, **plants** were grown in the greenhouse,  
 and then established and evaluated in wetlands. **Typha** (cattail),  
**Juncus** (rushes), **Scirpus** (bulrushes), and **Carex**  
 (sedges) were studied because they are common, dominant, high biomass  
 wetland-adapted plants, tolerant of chemically diverse ecosystems. The  
 goal was to define micropropagation and wetland establishment protocols.

Tissue culture systems defined for numerous monocot crop species can be readily applied to wetland plants, with a few modifications. Issues addressed were selection of explant material, shoot and root **regeneration** conditions, culture age verses regenerability, greenhouse acclimatization needs, plant uniformity and requirements for wetland establishment. In vitro-germinated seedlings were an excellent source of pathogen-free regenerable tissue. *T. latifolia*, *T. angustifolia*, and *J. accuminatus* were **regenerated** from **callus** induced in the dark with picloram, then transferred to medium with benzyladenine in the light to promote shoot organogenesis. *J. effusus*, *S. polyphyllus*, and *C. lurida* could not be **regenerated** from **callus**, which turned black. They could be **regenerated** directly by culturing intact seedlings directly on cytokinin media in the light. Shoots rooted with little or no auxin. *J. effusus* rooting was promoted by the addition of charcoal to the medium. Covering plants for the first 2 wk with plastic facilitated greenhouse establishment. There were high rates of greenhouse and wetland survival. No abnormal **plants** were observed. These **regeneration** systems could be utilized for the production of wetland plants for potential application in habitat restoration and wetland creation, and would provide an alternative to field collection.

L25 ANSWER 4 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2002:861352 HCAPLUS  
 DOCUMENT NUMBER: 137:349434  
 TITLE: Method for genetic transformation and organogenic regeneration of cotton  
 INVENTOR(S): Reichert, Nancy A.; Lim, Teong-kwee; Young, Margaret M.  
 PATENT ASSIGNEE(S): Mississippi State University, USA  
 SOURCE: U.S., 6 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6479287	B1	20021112	US 2000-562193	20000501
AU 2001040283	A5	20020725	AU 2001-40283	20010501
PRIORITY APPLN. INFO.:			US 2000-562193	A 20000501

AB Protocols for organogenic regeneration of cotton are provided, which makes the in vitro **regeneration** of mature fertile **plants** in a reduced amt. of time possible. Seedlings are the basis for **monocotyl** or hypocotyl explants which are transferred from the germination medium to a shoot initiation medium which comprises AgNO<sub>3</sub>. These explants, prior to shoot initiation, may be transformed with exogenous DNA, either through inoculation with an Agrobacterium agent such as *A. tumefaciens*, or through biolistic bombardment of the explants with microprojectiles having the exogenous DNA adsorbed onto their surface.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 5 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 2002:69448 HCAPLUS  
 DOCUMENT NUMBER: 136:115607  
 TITLE: Cloning of phosphoglucomutase gene's from rice, cattail, corn and soybean and their use in altering

seed starch composition and content  
 INVENTOR(S): Allen, Stephen M.; Butler, Karlene H.; Carlson, Thomas J.; Ilag, Lawrence L.  
 PATENT ASSIGNEE(S): E.I. du Pont de Nemours and Company, USA  
 SOURCE: Eur. Pat. Appl., 27 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1174510	A2	20020123	EP 2001-306143	20010717
EP 1174510	A3	20020424		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO.

US 2002165385	A1	20021107	US 2001-906209	20010716
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PRIORITY APPLN. INFO.: US 2000-218712P P 20000717

AB Plant genes for cytosol and plastid forms of phosphoglucomutases are cloned from cattail, corn, rice and soybean for use in the modulation of carbon flux and seed starch compn. and content. The invention provides the protein sequences for above cloned phosphoglucomutases but not their cDNA sequence. The genes, or gene fragments, may be used in sense or antisense orientations to alter levels of the enzyme. Antisense expression of a soybean phosphoglucomutase cDNA in **somatic embryos** led to a lowering of starch content.

L25 ANSWER 6 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2003:110243 BIOSIS

DOCUMENT NUMBER: PREV200300110243

TITLE: Micropropagation of the rare *Eucrosia stricklandii* (Amaryllidaceae) by twin-scaling and shake liquid culture.

AUTHOR(S): Colque, R.; Viladomat, F.; Bastida, J.; Codina, C. (1)

CORPORATE SOURCE: (1) Departament de Productes Naturals, Biologia Vegetal i Edafologia, Facultat de Farmacia, Universitat de Barcelona, 08028, Barcelona, Catalonia, Spain:  
 ccodina@farmacia.far.ub.es Spain

SOURCE: Journal of Horticultural Science & Biotechnology, (November 2002, 2002) Vol. 77, No. 6, pp. 739-743. print.  
 ISSN: 1462-0316.

DOCUMENT TYPE: Article

LANGUAGE: English

AB Bulbs of *E. stricklandii* were introduced into in vitro culture by the twin-scaling technique. Different Murashige and Skoog (MS) media supplemented with 0.5% w/v activated charcoal, naphthaleneacetic acid (NAA)/benzyladenine (BA) 0.54/4.44 µM or NAA/Thidiazuron (TDZ) 0.54/0.45 µM were used for shoot induction. Media with different combinations of 2,4-dichlorophenoxyacetic acid (2,4-D) and BA were tested during the secondary multiplication. The shoots obtained in the multiplication step were then transferred to a liquid medium with different sucrose concentrations (from 0.088 to 0.351 M) to increase biomass. Shoot bulbing was induced in 0.263 M sucrose semi-solid medium without growth regulators. Several media containing different concentrations of NAA (ranging from 0 to 5.37 µM) combined with various sucrose concentrations (from 0.044 to 0.263 M) were also tested for root induction and the bulblets were finally transplanted to soil. The best induction of shoots was obtained in the media with activated charcoal or with TDZ, but those treated with activated charcoal showed a better regeneration rate and the

shoots were better formed. The best **development** of new shoots was obtained in the medium containing 0.45 and 4.44  $\mu$ M of 2,4-D and BA, respectively. 0.175-0.263 M sucrose in the liquid medium appeared to be the most appropriate condition for increase in biomass. Rooting was promoted by low NAA concentrations (0.537-1.343  $\mu$ M), and 0.175 M sucrose was the best treatment for **root development**.

L25 ANSWER 7 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
DUPLICATE 2

ACCESSION NUMBER: 2003:208013 BIOSIS

DOCUMENT NUMBER: PREV200300208013

TITLE: Responses of flower phenology and seed production under cattle grazing impact in sandy grasslands.

AUTHOR(S): Kratochwil, Anselm (1); Fock, Swaantje; Remy, Dominique; Schwabe, Angelika

CORPORATE SOURCE: (1) Department of Ecology, University of Osnabrueck, D-49069, Osnabrueck, Germany: kratochwil@biologie.uni-osnabrueck.de, remy@biologie.uni-osnabrueck.de, schwabe@bio.tu-darmstadt.de Germany

SOURCE: Phytocoenologia, (December 10 2002) Vol. 32, No. 4, pp. 531-552. print.  
ISSN: 0340-269X.

DOCUMENT TYPE: Article

LANGUAGE: English

AB The impact of cattle grazing on selected characteristic and dominant plant species of three sandy grassland communities in northwestern Germany (Spergulo-Corynephorum typicum, S.-C. clado-nietosum and Diantho-Armerietum) is investigated with regard to the loss of above-ground diaspores in the course of a vegetation period. Special attention is given to the importance of the seed bank in the soil as compensation potential. The flower and fruit phenology of the plant species was analyzed by counting. A fence was erected so that data samples outside and within an enclosure could be compared. Extracted soil samples and a germination test give information about the diaspore reservoir in the soil at the beginning of the investigation. The comparison of grazed and ungrazed stands yielded the following results. The Spergulo-Corynephorum typicum is poor, the S.-C. clado-nietosum richer in palatable inflorescences and infructescences (e.g. Carex arenaria). In the former only 12-24 % of the inflorescences and infructescences are grazed (Carex arenaria, Corynephorus canescens), in the latter 45-51% (Carex arenaria). The Spergulo-Corynephorum can **regenerate** itself from the diaspore potential to a slight extent if there are gaps, e.g. caused by cattle trampling. The Diantho-Armerietum is quite intensively grazed, entailing a major reduction of flowers and fruits of certain plant species (Agrostis capillaris: inflorescences by 71%, infructescences 72%, Dianthus deltoides: flowers by 61%, fruits 22%). In contrast, two species increase flower and fruit numbers (by 36-77%) in the grazed sites (Agrostis vinealis, Ranunculus bulbosus). Faeces microsites are important elements for patch dynamic systems in the Diantho-Armerietum. At faeces microsites in the Diantho-Armerietum, which constitute about one-third of the plot areas, many flowers and fruits develop. Flower and fruit development at the faeces microsites and the seed bank in the soil ensure a generative regeneration of the Diantho-Armerietum. Gap dynamics, patch dynamics of faeces microsites and seed bank processes are driving forces for the generative regeneration of the investigated plant communities.

L25 ANSWER 8 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

DUPLICATE 3

ACCESSION NUMBER: 2002:296866 BIOSIS  
DOCUMENT NUMBER: PREV200200296866  
TITLE: Suspension culture and plant **regeneration** of  
**Typha latifolia**.  
AUTHOR(S): Estime, Lunique (1); O'Shea, Marie; Borst, Michael;  
Gerrity, Jennifer; Liao, Shih-Long  
CORPORATE SOURCE: (1) Water Supply and Water Resources Division, National  
Risk Management Research Laboratory, U.S. Environmental  
Protection Agency, 2890 Woodbridge Avenue, Edison, NJ,  
08837 USA  
SOURCE: Hortscience, (April, 2002) Vol. 37, No. 2, pp. 406-408.  
print.  
ISSN: 0018-5345.  
DOCUMENT TYPE: Article  
LANGUAGE: English

AB **Typha latifolia** L. (broadleaf cattail) **callus** was  
initiated from leaf sections, as well as from pistillate and staminate  
spikes. Two basal media in combination with three growth regulator regimes  
were tested for their capacity to induce **callus** from the  
explants. Pistillate spikes maintained in the dark on B5 medium  
supplemented with 5 mgcntdotL-1 dicamba and 1 mgcntdotL-1 BA produced the  
fastest growing cell line compared to other explants and media  
combinations. A growth curve in suspension culture was generated for this  
cell line on B5 medium. The mass of the **callus** increased by 150%  
by the end of the growth curve. Upon transfer of the **callus** to  
MS medium without growth regulators but with 3% sucrose and 3% phytigel,  
plants could be **regenerated** from 22% of the cultures. Chemical  
names used: 3,6-dichloro-2-methoxybenzoic acid (dicamba); N6-benzyladenine  
(BA).

L25 ANSWER 9 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
DUPLICATE 4

ACCESSION NUMBER: 2003:31889 BIOSIS  
DOCUMENT NUMBER: PREV200300031889  
TITLE: Optimizing embryogenic callus production and **plant**  
**regeneration** from 'Tifton 9' bahiagrass seed  
explants for genetic manipulation.  
AUTHOR(S): Grando, Magali F.; Franklin, Chandra I.; Shatters, Robert  
G., Jr. (1)  
CORPORATE SOURCE: (1) Department of Agronomy, University of Florida, P.O. Box  
110300, Gainesville, FL, 32611-0300, USA:  
rshatters@ushrl.ars.usda.gov USA  
SOURCE: Plant Cell Tissue and Organ Culture, (December 2002, 2002)  
Vol. 71, No. 3, pp. 213-222. print.  
ISSN: 0167-6857.  
DOCUMENT TYPE: Article  
LANGUAGE: English

AB Bahiagrass (*Paspalum notatum* Flugge) is a warm season forage grass widely  
cultivated in southeastern U.S. and South America. The cultivar Tifton 9  
has several desirable characteristics such as high forage yield, more  
vigor at the seedling stage, etc.; but its forage quality is very low. As  
an initial step for future genetic manipulations to improve its forage  
characteristics, we have optimized in vitro culture conditions for  
**plant regeneration**. In this report, we describe an  
efficient method for embryogenic callus induction and **plant**  
**regeneration** from bahiagrass (cv. Tifton 9) seed explants, which  
are readily available and easy to manipulate, compared to other explant  
sources reported in the literature. Murashige and Skoog (MS) medium

containing 30 µM dicamba and 5 µM 6-benzyladenine (BA) was optimal for callus induction and growth. Out of 9734 seeds cultured, 65.7% germinated and 21.4% produced embryogenic callus on this medium. Shoot formation was best when embryogenic calluses induced in this medium were transferred to MS medium supplemented with 5 µM BA and 1 µM gibberellic acid with 1640 plantlets formed per gram fresh weight of callus tissue. When transferred to hormone-free SH medium, **shoot** systems produced well-**developed root** systems. The resulting plantlets grew normally produced viable seeds when transferred to soil in the greenhouse. Histochemical staining for GUS activity arising from transient expression of the introduced uidA (beta-glucuronidase) gene indicated that bahiagrass embryogenic callus produced by this method is suitable for gene transfer via biolistic bombardment; and it can serve as a good target tissue for future genetic manipulations to improve the forage quality of bahiagrass (cv. Tifton 9).

L25 ANSWER 10 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 ACCESSION NUMBER: 2003:145428 BIOSIS  
 DOCUMENT NUMBER: PREV200300145428  
 TITLE: 57th Annual Meeting of the Korean Association of Biological Sciences, Seoul, South Korea, October 24-26, 2002.  
 AUTHOR(S): Korean Association of Biological Sciences  
 SOURCE: Korean Journal of Biological Sciences, (2002) Vol. 6, No. Supplement, pp. 10-215. print.  
 Meeting Info.: 57th Annual Meeting of the Korean Association of Biological Sciences Seoul, South Korea October 24-26, 2002 Korean Association of Biological Sciences  
 . ISSN: 1226-5071.  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 AB This meeting of the Korean Association of Biological Sciences consists of papers and abstracts written in Korean and English for 282 presentations. Selected topics include genetic status of Anopheles species, LINE element analysis of African great apes, nutrient dynamics of Phragmites and **Typha** in wetlands, spinal cord **regeneration** in Xenopus tadpoles, protein complexes in flowering, and biology education in secondary schools.

L25 ANSWER 11 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 ACCESSION NUMBER: 2002:335226 BIOSIS  
 DOCUMENT NUMBER: PREV200200335226  
 TITLE: Organogenesis and **plant regeneration** from rhizome callus of *Alpinia calcarata*: A medicinal plant.  
 AUTHOR(S): Martin, K. P.; Thomas, K. A.; Hariharan, Molly (1)  
 CORPORATE SOURCE: (1) Department of Botany, University of Calicut, Calicut, KER, 673635 India  
 SOURCE: Journal of Medicinal and Aromatic Plant Sciences, (March, 2002) Vol. 24, No. 1, pp. 6-11. print.  
 DOCUMENT TYPE: Article  
 LANGUAGE: English  
 AB Callus, organogenesis and **plant regeneration** of *Alpinia calcarata* were induced from rhizome explants on Murashige and Skoog (MS) medium supplemented with various levels of different auxins and cytokinins either alone or in combination. Transfer of callus on MS having 1.5 mg/l benzylaminopurine (BAP) and 0.5 mg/l Indole-3-acetic acid (IAA) produced 15-20 shoots per culture along with more than 20 meristematic protuberances within 40 days. Transfer of **shoot** primordia

**developed** on MS+BAP (1.5 mg/l) and 2,4-dichlorophenoxy acetic acid (2,4-D) (0.25 mg/l) to a higher concentration of BAP (10.0 mg/l) and 2,4-D (0.1 mg/l) produced 18-25 shoots and 3-5 roots per culture within 40 days. The callus showed potentiality of regeneration along with callus proliferation and formation of meristematic protuberances even after 18 months. Shoots transferred on MS with 1.0 mg/l indole-3-butyric acid (IBA) **developed 6-8 roots per shoot**. However, shoots on MS full-strength hormone-free medium produced 3-5 shoots with 3-6 roots within 40 days. 80% of the **regenerated plants** survived in field condition.

L25 ANSWER 12 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2003:74814 BIOSIS

DOCUMENT NUMBER: PREV200300074814

TITLE: The high-altitude environment of Mt. Elgon (Uganda, Kenya): Climate, vegetation, and the impact of fire.

AUTHOR(S): Wesche, Karsten

SOURCE: Ecotropical Monographs, (June 30 2002) No. 2, pp. 1-253. print.

DOCUMENT TYPE: Article; Book

LANGUAGE: English

AB The present study describes the results of 16-month stay in the lower Afroalpine zone of Mt. Elgon at the border of Uganda and Kenya. The research focused on the relationships between ericaceous communities and truly Afroalpine grasslands, seeking an explanation for the heterogeneous appearance of the ericaceous belt. Climate and fires were the main environmental factors of interest. The altitudinal variation in climate and vegetation was assessed in two transects along the moist western side and the dry eastern side of Mt. Elgon. Climatic conditions in the lower afroalpine zone were measured in more detail, and the impacts of fire assessed by the first burning experiments in an Afroalpine environment. Data on fire ecology were supplemented by information gathered during a vegetation survey of the lower Afroalpine zone and ericaceous belt. The study revealed lapse rates for soil temperatures of 0.65 to 0.75 K/100 m on both sides of the mountain but the dry eastern exposure was up to 2.5 K warmer. Maximum precipitation was recorded at 2200 to 2600 m on both sides, but differences in precipitation and temperatures vanished above 3600 m as a result of high-altitude easterly winds. Using soil temperatures for climatological research proved to be difficult, since values differed in a non-systematical way from air temperatures. Soil temperatures in the Afroalpine zone were regularly 2-3 K higher than air temperatures (20 cm and 200 cm above ground) and seasonal variation was still clearly detected at 100 cm depth. The Afroalpine climate of Mt. Elgon is characterized by low annual but high diurnal amplitudes in air temperature. Conditions were more extreme near the ground than in the standard two-meters-high weather screen. There was no evidence for higher temperatures in densely vegetated Afroalpine valleys; instead cold air ponding was a common feature. While seasonal variation in temperature was small, precipitation showed a clearly seasonal pattern with a well-developed dry season. Dry season conditions in 1997 were particularly severe, with eight dry weeks resulting in widespread but not lethal drought stress and, more importantly, extensive fires. A vegetation survey of the montane forests led to the recognition of 10 plant communities, while a more detailed survey of the lower Afroalpine and ericaceous vegetation yielded 32 plant communities. Communities compared well with vegetation units described for other mountains in the region. Plots in the lower Afroalpine zone usually showed signs of former burning like charred trunks or strikingly patchy vegetation structures. Thus very few samples were truly undisturbed and most units represent secondary, albeit not.



necessarily unnatural, vegetation. At present fire is the dominant disturbance factor, but large herbivores introduced disturbance long before humans arrived on Mt. Elgon. Remnant *Erica excelsa* groves form the present timberline at 3700 m a.s.l., while multistemmed plants of *Erica trimera* form a gradual transition from forests to scrub. The upper limit of closed ericaceous vegetation is presently reached at 4100 m. Repeated sampling of selected plots gave an impression of dynamic processes in the vegetation. Plants showed a weak but significant phenology, flowering being concentrated in most cases during the dry season and towards its end. Thus drought stress exerted little influence on reproductive behavior. Phenological phases were never absolute, since at any given time some individuals would flower; quantitative changes were however apparent. While most species preferred the dry season, some flowered all year long and others had very short reproductive cycles not clearly linked to any season. The last group included species with superannually synchronized flowering events (mast years), like the giant rosette plants and the most common tussock grasses. Fires exerted a strong influence on reproductive behavior. burned plots showed a remarkable increase in flowering activity; reproduction peaked some 5-7 months after fire in the rainy season, thus being significantly different from the unburned plots. Moreover the tussock grasses, which rarely flowered in unburned vegetation, showed mass flowering half a year after a fire had passed. Monitoring of post-fire successions gave an insight into the regeneration capabilities of various Afroalpine vegetation types. Dry tussock grasslands and *Carex* bogs **regenerated** almost completely within 2 years of burning and *Dendrosenecio elgonensis* plants were equally capable of survival and fast recovery. *Erica* plants survived fire as well, but shoot development was slow; two years after burning the plants had still not recovered their original structure. *Alchemilla* plants were killed by fires and showed no apparent signs of recovery after two years of study. Thus fire frequency is of crucial importance for the vegetation distribution in the Afroalpine belt of Mt. Elgon. Pronounced drought in 1997 and 1999 resulted in severe fires that devastated more than half of the high-altitude environment of Mt. Elgon. All fires were anthropogenic. Long-term climatic records suggest that pronounced drought occurs every 2-8 years, resulting in favorable conditions for burning by hunters and pastoralists. As a consequence, hypothetical fire frequency would be low enough for the regeneration of the prevailing grass communities but not for *Erica* and *Alchemilla* scrub. Hence fires are the main factor responsible for the present heterogeneous structure of the lower Afroalpine and ericaceous belt of Mt. Elgon, and presumably also for related communities in other tropical mountains in East Africa and elsewhere.

L25 ANSWER 13 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 2001:131833 HCAPLUS  
 DOCUMENT NUMBER: 135:353428  
 TITLE: Tissue culture and transient gene expression studies  
 in **freshwater** wetland **monocots**  
 AUTHOR(S): Rogers, S. M. D.; Beech, J.; Sarma, K. S.  
 CORPORATE SOURCE: Department of Bioscience, Salem-Teikyo University,  
 Salem, WV, 26426, USA  
 SOURCE: Biotechnology in Agriculture and Forestry (2001),  
 48(Transgenic Crops III), 337-351  
 CODEN: BAFOEG; ISSN: 0934-943X  
 PUBLISHER: Springer-Verlag  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The emergent **freshwater** wetland **monocots** *Typha*  
 , *Juncus*, *Scirpus*, and *Carex* are common

throughout open marshes of temperate and tropical regions of the Northern and Southern Hemispheres. These ecol. important plants have been widely planted in constructed wetlands for wastewater treatment, soil stabilization, development of wildlife and fisheries habitats. Routine gene transfer techniques offer the possibility of genetically altering these plants for targeted remediation activities. Results of the first attempt to create engineered wetland plants for mercury detoxification using Agrobacterium-mediated and microprojectile bombardment techniques are presented.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 14 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 ACCESSION NUMBER: 2001:373605 BIOSIS  
 DOCUMENT NUMBER: PREV200100373605  
 TITLE: **Tissue culture** and wetland establishment of the **freshwater monocots** carex, juncus, scirpus, and typha.  
 AUTHOR(S): Rogers, Suzanne M. D. (1)  
 CORPORATE SOURCE: (1) Salem International University, Salem, WV, 26426-0500: Rogers@salemiu.edu USA  
 SOURCE: In Vitro Cellular & Developmental Biology Animal, (March, 2001) Vol. 37, No. 3 Part 2, pp. 8.A. print.  
 Meeting Info.: Congress on In Vitro Biology St. Louis, Missouri, USA June 16-20, 2001  
 ISSN: 1071-2690.  
 DOCUMENT TYPE: Conference  
 LANGUAGE: English  
 SUMMARY LANGUAGE: English

L25 ANSWER 15 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN  
 ACCESSION NUMBER: 2000:790656 HCAPLUS  
 DOCUMENT NUMBER: 133:332316  
 TITLE: Transformation and **regeneration** of monocotyledonous wetland **plants** and the development of plants for bioremediation  
 INVENTOR(S): **Rogers, Suzanne D.**  
 PATENT ASSIGNEE(S): Salem-Teikyo University, USA  
 SOURCE: PCT Int. Appl., 70 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000066757	A1	20001109	WO 2000-US11400	20000428
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LP, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
EP 1179077	A1	20020213	EP 2000-923627	20000428

Ibrahim 10/069,098

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO

PRIORITY APPLN. INFO.:

US 1999-131513P P 19990429

US 1999-171127P P 19991216

WO 2000-US11400 W 20000428

AB The present invention recognizes that plant cells, particularly plant cells from **freshwater monocot plants**, can be transformed and **regenerated**, particularly to produce **plants** that have bioremediative capacities. The present invention includes methods for transforming and **regenerating** a **plant**, preferably a **freshwater monocot plant** cell such as the **freshwater** emergent wetland **monocots Carex, Scirpus, Juncus** or **Typha**. The present invention includes cells and populations of cells, including **callus**, plants and seeds, made by or derived from this method. The present invention also includes methods of bioremediation by exposing a plant of the present invention to an environment or sample that contains or is suspected of contg. at least one contaminant that can be reduced by the plant.

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 16 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 5

ACCESSION NUMBER: 2000:676734 HCAPLUS

DOCUMENT NUMBER: 134:113080

TITLE: Plant **regeneration** from seedling explants of **Juncus effusus**

AUTHOR(S): Sarma, K. S.; Rogers, S. M. D.

CORPORATE SOURCE: Department of Bioscience, Salem-Teikyo University, Salem, WV, 26426-0500, USA

SOURCE: Aquatic Botany (2000), 68(3), 239-247

CODEN: AQBODS; ISSN: 0304-3770

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An in vitro plant **regeneration** method for **Juncus effusus** L. was established. Six to eight day old in vitro grown seedlings, cultured on Murashige and Skoog medium supplemented with benzyladenine (BA), 2-isopentenyladenine (2iP), or kinetin, showed multiple shoot regeneration within 4 wk. Among the three cytokinins, BA and 2iP induced the highest (88 and 86%, resp.) regeneration frequency, while no significant differences were noticed in regeneration frequency between control (without cytokinin) and kinetin. The in vitro generated shoots, upon subculture to the same shoot induction medium, produced an av. of 10 shoots on 2iP medium. The regenerated shoots turned brown at the base, and gradually turned black, resulting in reduced plantlet rooting. Addn. of charcoal to the rooting medium resulted in increased rooting percentages, increased root and shoot growth and reduced browning, whereas addn. of the antioxidants citrate and ascorbate did not. Rooted plants, transferred to a com. soil mix, had a survival rate of >95% in the greenhouse. All the plants that were transferred to wetlands survived. This was the first tissue culture study on this ecol. important wetland plant.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 17 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2001:221278 BIOSIS

DOCUMENT NUMBER: PREV200100221278

TITLE: **Plant regeneration** from embryogenic  
cultures of *Phragmites australis* (Cav.) Trin. Ex Steud.  
AUTHOR(S): Mathe, Csaba; Hamvas, Marta M.; Grigorszky, Istvan; Vasas,  
Gabor; Molnar, Erika; Power, J. Brian; Davey, Michael R.  
(1); Borbely, George  
CORPORATE SOURCE: (1) Plant Science Division, School of Biological Sciences,  
University of Nottingham, University Park, Nottingham, NG7  
2RD: mike.davey@nottingham.ac.uk UK  
SOURCE: Plant Cell Tissue and Organ Culture, (2000) Vol. 63, No. 1,  
pp. 81-84. print.  
ISSN: 0167-6857.  
DOCUMENT TYPE: Article  
LANGUAGE: English  
SUMMARY LANGUAGE: English  
AB Embryogenic cultures of the common reed (*Phragmites australis* (Cav.) Trin.  
Ex. Steud.) were induced on Murashige and Skoog (1962)-based medium with  
2% (w/v) sucrose, B5 vitamins and 4.5 µM 2,4-dichlorophenoxyacetic acid.  
Four independent culture lines, two initiated from stem nodes and two from  
roots, were established. These cultures underwent somatic embryogenesis.  
In one line of stem node origin, the somatic embryos germinated and  
developed into plants, following transfer of embryogenic cultures to  
Murashige and Skoog (1962)-based medium lacking growth regulators, with  
108 +- 17 plants being recovered per 100 mg fresh weight of culture. In  
other lines, the somatic embryos **developed roots**, but  
not **shoots**. **Shoot** regeneration via somatic  
embryogenesis offers potential as an in vitro system for physiological  
studies, including assessments of the response of common reed to  
environmental pollutants.

L25 ANSWER 18 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 2000:339893 BIOSIS  
DOCUMENT NUMBER: PREV200000339393  
TITLE: Somatic embryogenesis and plant **regeneration** in  
**Typha** *angustifolia* (narrow leaf cattail).  
AUTHOR(S): Rogers, S. D. (1); Sarma, K. S. (1)  
CORPORATE SOURCE: (1) Bioscience Department, Salem-Teikyo University, Salem,  
WV, 26426 USA  
SOURCE: In Vitro Cellular & Developmental Biology Animal, (March,  
2000) Vol. 36, No. 3 Part 2, pp. 70.A. print.  
Meeting Info.: Meeting of the Society for In Vitro Biology  
World Congress on In Vitro Biology San Diego, California,  
USA June 10-15, 2000  
ISSN: 1071-2690.  
DOCUMENT TYPE: Conference  
LANGUAGE: English  
SUMMARY LANGUAGE: English

L25 ANSWER 19 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 2000:74408 BIOSIS  
DOCUMENT NUMBER: PREV200000074408  
TITLE: Improved **plant regeneration** from  
suspension-cultured cells of *Iris germanica* L. 'Skating  
Party'.  
AUTHOR(S): Wang, Yuexin; Jeknic, Zoran; Ernst, Richard C.; Chen, Tony  
H. H. (1)  
CORPORATE SOURCE: (1) Department of Horticulture, ALS 4017, Oregon State  
University, Corvallis, OR USA  
SOURCE: Hortscience, (Dec., 1999) Vol. 34, No. 7, pp. 1271-1276.  
ISSN: 0018-5345.

DOCUMENT TYPE: Article  
LANGUAGE: English  
SUMMARY LANGUAGE: English

AB To improve the efficiency of iris **plant regeneration**, we tested the influence of several combinations of Kin and NAA in culture media on the induction of morphogenesis and the subsequent development of plantlets. The highest rates of regeneration (67%) were consistently observed in induction media containing 0.5 µM NAA and either 2.5 or 12.5 µM Kin. Developing medium containing 1.25 µM BA was optimal for high regeneration rates and a high percentage of plantlets simultaneously **developing shoots and roots**. Rooted plantlets were easily acclimatized and transplanted to various soil mixtures, then grown in the greenhouse. Under optimal conditions as many as 8000 plantlets could be regenerated from 1 g of cells in approximately 4 months. Chemical names used: kinetin (Kin); 1-naphthaleneacetic acid (NAA); N6-benzyladenine (BA).

L25 ANSWER 20 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2000:155828 BIOSIS

DOCUMENT NUMBER: PREV200000155828

TITLE: Propagation of *Spathoglottis plicata* BL. (Orchidaceae) through in vitro culture of leaf bases.

AUTHOR(S): Nayak, N. R. (1); Rath, S. P. (1); Patnaik, S. N. (1)

CORPORATE SOURCE: (1) Cytogenetics Laboratory, Post-Graduate Department of Botany, Utkal University, Bhubaneswar, OR, 751004 India

SOURCE: Advances in Plant Sciences., (Dec., 1999) Vol. 12, No. 2, pp. 589-592.

ISSN: 0970-3586.

DOCUMENT TYPE: Article

LANGUAGE: English

SUMMARY LANGUAGE: English

AB A protocol for **plant regeneration** from in vitro culture of leaf bases of *Spathoglottis plicata* BL. is described. Differentiation up to six shoot buds occurred in 5 weeks from the base of a in vitro raised leaf cultured on Murashige and Skoog's (1962) medium supplemented with 10.0 mg/l N6-benzyladenine (BA) and 2.5 mg/l naphthalene acetic acid (NAA). **Roots** could be **developed** from the **shoot** on transferring the shoots to a medium containing 2.0 mg/l indole 3 butyric acid (IBA). The plantlets developed were successfully hardened off and established in the experimental garden.

L25 ANSWER 21 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1999:34735 BIOSIS

DOCUMENT NUMBER: PREV199900034735

TITLE: Callus formation and **plant regeneration** from developing ovaries in *Gladiolus*.

AUTHOR(S): Kasumi, Masakazu; Takatsu, Yasumasa; Tomotsune, Hidehiko; Sakuma, Fumio

CORPORATE SOURCE: Plant-Biotechnol. Inst., Ibaraki Agric. Cent., Ago, Iwama, Nishibaraki, Ibaraki 319-0292 Japan

SOURCE: Journal of the Japanese Society for Horticultural Science, (Nov., 1998) Vol. 67, No. 6, pp. 951-957.

ISSN: 0013-7626.

DOCUMENT TYPE: Article

LANGUAGE: Japanese

SUMMARY LANGUAGE: Japanese; English

AB Callus formation and **plant regeneration** from flower bud organs in *Gladiolus* were studied. The results were as follows: 1. Callus was not inducible from upper parts of the perianth, but was

obtained from their lower parts and from ovaries at frequencies of 56.0% and 94.0%, respectively; about 64.0% of these calli regenerated **shoots**. 2. Among ovaries at different **developmental** stages, those samples 2-3 days before anthesis were most efficient in callus formation and shoot regeneration. 3. Calli were induced from all explants of ovaries on MS medium containing 5 mg cndot liter-1 NAA and 5 mg cndot liter-1 BAP. 4. Shoots were regenerated most efficiently from the calli on MS medium containing 2 mg cndot liter -1 BAP. 5. Callus formation from ovaries varied little among varieties, but shoot regeneration from the calli varied a great deal, e.g. regenerating frequency of cv. Traveler was much higher than that of cv. Hector. 6. When regenerated shoots were transferred to the MS medium, **shoots** and **roots developed** and subsequently corms formed at the base of the shoots. After corms were released from their dormancy by a low temperature treatment and transplanted into the field, they **developed shoots** and **roots** and then flowered. Flower shape and color of the **regenerated plant** had the same characteristics as the mother plant.

L25 ANSWER 22 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 6  
 ACCESSION NUMBER: 1998:298693 HCAPLUS  
 DOCUMENT NUMBER: 129:14469  
 TITLE: Plant **regeneration** and multiplication of the emergent wetland monocot **Juncus** acuminatus  
 AUTHOR(S): Sarma, K. S.; Rogers, S. M. D.  
 CORPORATE SOURCE: Department Bioscience, Salem-Teikyo University, Salem, WV, 26426, USA  
 SOURCE: Plant Cell Reports (1998), 17(8), 656-660  
 CODEN: PCRPD8; ISSN: 0721-7714  
 PUBLISHER: Springer-Verlag  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB A reliable **callus regeneration** and shoot multiplication system for wetland monocot **Juncus** acuminatus has been established. **Callus** was induced from 6-day-old seedlings on Murashige and Skoog medium supplemented with 5 mg/L picloram. The **callus** differentiated into shoots upon transfer to 5 mg/L benzyladenine (BA)-supplemented medium. Effects of medium pH (3.8-7.8) and source of **callus** (grown in the dark or continuous light) on **regeneration** were detd. Both parameters significantly influenced **regeneration**. **Regenerated** shoots were multiplied by sub-culturing shoots onto 5 mg/L BA medium at 4-wk intervals. The **regenerated** shoots were rooted on 0.1 mg/L naphthaleneacetic acid-supplemented medium. The rooted plants were transferred to pots contg. a com. potting mix and established in the greenhouse. Plants covered with plastic grew faster and flowered earlier than uncovered plants. All plants set viable seeds.

L25 ANSWER 23 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
 ACCESSION NUMBER: 1998:375672 BIOSIS  
 DOCUMENT NUMBER: PREV199800375672  
 TITLE: High frequency plant **regeneration** from **callus** cultures of **Typha** angustifolia.  
 AUTHOR(S): Sarma, K. S.; Hodono, Kazumi; Rogers, Suzanne Dethier  
 CORPORATE SOURCE: Dep. Bioscience, Salem-Teikyo Univ., Salem, WV 26426 USA  
 SOURCE: In Vitro Cellular & Developmental Biology Animal, (March, 1998) Vol. 34, No. 3 PART 2, pp. 74A.  
 Meeting Info.: 1998 Meeting of the Society for In Vitro Biology Las Vegas, Nevada, USA May 30-June 4, 1998 Society

for In Vitro Biology  
. ISSN: 1071-2690.

DOCUMENT TYPE: Conference  
LANGUAGE: English

L25 ANSWER 24 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 7

ACCESSION NUMBER: 1999:199281 HCAPLUS

DOCUMENT NUMBER: 130:234784

TITLE: Shoot **regeneration** and **plant**  
acclimatization of the wetland monocot cattail (**Typha** latifolia)

AUTHOR(S): Dethier Rogers, S.; Beech, J.; Sarma, K. S.

CORPORATE SOURCE: Department Bioscience, Salem-Teikyo University, Salem,  
WV, 26426, USA

SOURCE: Plant Cell Reports (1998), 18(1-2), 71-75

CODEN: PCRPD8; ISSN: 0721-7714

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A **regeneration** system for broadleaf cattail (**Typha** latifolia), a common **freshwater** wetland **monocot**, was established. **Callus** was induced from 3 day-old seedlings on Murashige and Skoog medium supplemented with picloram or 2,4-dichlorophenoxyacetic acid (2,4-D). Picloram induced more **callus** growth than 2,4-D. **Callus** proliferated predominantly from the root-shoot junction and sporadically from the roots. Upon transfer to N6-benzyladenine-supplemented medium, **callus regenerated** shoots. The mode of **regeneration** was organogenesis, with shoots arising from organized areas of **callus**. The **regenerated** shoots rooted in vitro and, on transfer to pots contg. a com. potting mix, were established in a greenhouse. The plants grew vigorously and produced a high root mass. No albinos and no morphol. aberrations were obsd. in the **regenerates**.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 25 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1998:390842 BIOSIS

DOCUMENT NUMBER: PREV199800390842

TITLE: In vitro regeneration of the giant bamboo Dendrocalamus giganteus (Poaceae).

AUTHOR(S): Fonseca, Miguel Munoz (1); Berger, Eric Guevara; Longhi, Mayra Montiel

CORPORATE SOURCE: (1) Apartado Postal 2050, San Jose Costa Rica

SOURCE: Revista de Biologia Tropical, (June, 1998) Vol. 46, No.

SUPPL. 3, pp. 50-56.

ISSN: 0034-7744.

DOCUMENT TYPE: Article

LANGUAGE: Spanish

SUMMARY LANGUAGE: English

AB **Callus** initiation and in vitro **plant regeneration** were achieved using giant bamboo Dendrocalamus giganteus. The highest rate of **callus** initiation was observed when the apex and young leaves from buds excised from secondary branches were cultured on Murashige and Skoog's medium (MS) supplemented with 3 mg/l 2,4-D and 1 mg/l zeatin or 3 mg/l 2,4-D alone. **Callus** were initiated from the mesophyll tissue of foliar primordia in the apex. Two types of **callus** were observed: friable, white, soft and non-organogeic **callus** were the most common type, especially when

initiated in medium with auxin alone. those callus were composed of large undifferentiated cells and undergo oxidation and necrosis after the fourth week of culture. Several calluses, developed in media supplemented with 2,4-D and zeatin were white to pale yellow, compact and smooth, composed by meristematic and non-meristematic cells. Upon transfer to MS medium supplemented with 1 mg/l zeatin the compact callus **developed shoots and roots**. Whole plants were **developed** when transferred to MS medium supplemented with 1.5% sucrose for four weeks and then transferred to soil.

L25 ANSWER 26 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 8

ACCESSION NUMBER: 1997:224247 BIOSIS

DOCUMENT NUMBER: PREV199799515963

TITLE: **Regeneration of *Scirpus americanus*** in a Texas coastal marsh following lesser snow goose herbivory.  
AUTHOR(S): Miller, Deborah L. (1); Smeins, Fred E.; Webb, James W.; Longnecker, Michael T.

CORPORATE SOURCE: (1) Dep. Wildlife Ecology Conservation, Univ. Fla. Milton, 5988 Highway 90, Bldg. 4900, P.O. Box 3634, Milton, FL 32572-3634 USA

SOURCE: Wetlands, (1997) Vol. 17, No. 1, pp. 31-42.  
ISSN: 0277-5212.

DOCUMENT TYPE: Article

LANGUAGE: English

AB Interaction of herbivory by wintering lesser snow geese (*Anser caerulescens caerulescens*), environmental conditions, and burning were investigated in a mid-Texas coastal marsh dominated by *Scirpus americanus* (Olney bulrush). Goose grubbing and use of *S. americanus* rhizomes and roots initially produced a patchwork of denuded and vegetated areas on a recently burned area. Regrowth occurred by reestablishment of uprooted shoot complexes; regeneration from seed was not observed. Regrowth was dependent on intensity of use and post-herbivory environmental conditions. After three years of varying levels of goose use and environmental conditions, lowest foliar cover and standing crop occurred in areas with a high frequency and intensity of goose use followed by spring drought and high salinities. Greatest growth was associated with low frequency and intensity of use followed by normal spring freshwater inflows and low salinities. Burning did not significantly affect the response of *S. americanus*. Continued frequent and intense snow goose use, coupled with high salinity and extended periods with water levels below the marsh surface, can produce denuded mudflats subject to accelerated soil erosion. Management strategies to reduce the impact of these combined events could be implemented. Hydroperiod and salinity conditions should be routinely monitored, and goose populations should be temporally and spatially directed to reduce the potential for conversion of marsh to permanent mudflats.

L25 ANSWER 27 OF 47 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN

ACCESSION NUMBER: 95:70095 SCISEARCH

THE GENUINE ARTICLE: QB336

TITLE: CIENEGA-DE-SANTA-CLARA, A REMNANT WETLAND IN THE RIO-COLORADO DELTA (MEXICO) - VEGETATION DISTRIBUTION AND THE EFFECTS OF WATER-FLOW REDUCTION

AUTHOR: ZENGEL S A; MERETSKY V J; GLENN E P (Reprint); FELGER R S; ORTIZ D

CORPORATE SOURCE: ENVIRONM RES LAB, 2601 E AIRPORT DR, TUCSON, AZ, 85706 (Reprint); ENVIRONM RES LAB, TUCSON, AZ, 85706; UNIV ARIZONA, SCH RENEWABLE NAT RESOURCES, ADV RES TECHNOL



COUNTRY OF AUTHOR: PROG, TUCSON, AZ, 85721; DRYLANDS INST, TUCSON, AZ, 85719  
SOURCE: USA  
ECOLOGICAL ENGINEERING, (JAN 1995) Vol. 4, No. 1, pp.  
19-36.  
ISSN: 0925-8574.  
DOCUMENT TYPE: Article; Journal  
FILE SEGMENT: AGRI  
LANGUAGE: ENGLISH  
REFERENCE COUNT: 29

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB The Cienega de Santa Clara is the largest remaining wetland in the Rio Colorado delta; it supports endangered bird and fish species. The Cienega is maintained by agricultural drainage water discharge from the USA which in the future may be diverted to the Yuma Desalting Plant. We examined the existing vegetation patterns and effects of flow disruption on vegetation using seasonal aerial and ground surveys. The Cienega was dominated by *Typha domingensis* and contained eight subdominant hydrophytes in addition. The distribution of marsh plants was related to salinity and water depth within the Cienega. Disturbance in the form of burning of the *Typha* and grazing of cattle on the new growth had a marked effect on the status of the vegetation in accessible parts of the marsh. During 8 months of unplanned flow interruption due to the need for canal repairs, 60-70% of the marsh foliage died back. Green vegetation was confined to a low-lying geologic fault which retained water; however, *Typha domingensis* **regenerated** from dormant rhizomes following the return of canal flow. Though the vegetation proved resilient, prolonged flow reduction would unavoidably reduce the size of the wetland and its capacity to support associated wetland functions.

L25 ANSWER 28 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 1995:320604 BIOSIS  
DOCUMENT NUMBER: PREV199598334904  
TITLE: In vitro somatic embryogenesis in *Dioscorea caucasica*  
Lipsky and *Dioscorea balcanica* Kusanin and the  
cryopreservation of their organogenic callus tissues.  
AUTHOR(S): Chulafich, L.; Grubishich, D.; Vuiichich, R.; Volkova, L.  
A.; Popov, A. S. (1)  
CORPORATE SOURCE: (1) Inst. Plant Physiol., Russ. Acad. Sci., ul.  
Botanicheskaya 35, 127276 Moscow Russia  
SOURCE: Fiziologiya Rastenii (Moscow), (1994) Vol. 41, No. 6, pp.  
929-934.  
ISSN: 0015-3303.  
DOCUMENT TYPE: Article  
LANGUAGE: Russian  
SUMMARY LANGUAGE: Russian

AB Possible regeneration of endemic *D. caucasica* and *D. balcanica* was studied, using induction of somatic embryogenesis in callus cultures. The possibility of the cryopreservation of these cultures in liquid nitrogen was investigated. The growth of calli continued in both species after deep freezing and thawing. It was shown that the addition of 2,4-D to an agar-containing medium contributed to the induction of embryogenic callus from organogenic callus during a single cycle of cultivation (28 days). The subsequent transportation of embryogenic callus into an auxin-free liquid medium resulted in the formation of aggregated globular structures and embryoids. A decrease in auxin concentration during induction increased the number of somatic embryos. The transportation of these embryos into a IAA- and 6-benzyl-aminopurine-containing medium resulted in the **development** of sprouts (**root** and **shoot** subsequently). Eight weeks later, the plants were transferred into pots

and then into the soil. The **regenerated plants** flowered after a year. The results of the study present a new method for preserving gene pool of rare endemic plants.

L25 ANSWER 29 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1994:116983 BIOSIS

DOCUMENT NUMBER: PREV199497129983

TITLE: Origin and development of embryo and bud primordia during maturation of embryogenic calli of Zea mays.

AUTHOR(S): Emons, Anne Mie C. (1); De Does, Hans

CORPORATE SOURCE: (1) Dep. Plant Cytol. Morphol., Wageningen Agric. Univ., Arboretumlaan 4, 6703 BD Wageningen Netherlands

SOURCE: Canadian Journal of Botany, (1993) Vol. 71, No. 10, pp. 1349-1356.

ISSN: 0008-4026.

DOCUMENT TYPE: Article

LANGUAGE: English

SUMMARY LANGUAGE: English; French

AB Maize genotype 4C1 calli under embryo maturation conditions give rise to somatic embryos that can be **regenerated into plants**.

This scanning electron microscope study shows that the pattern formation is as in zygotic embryos. A globular stage somatic embryo forms a starch-containing scutellum, a coleoptile, and leaf primordia in the same order and pattern as in zygotic embryos. There is no callus tissue between shoot and root meristems, as occurs in organogenesis. However, the study also reveals a different order of events: **shoot** meristems with leaf primordia **develop** at the base of leafy structures, on the surface of the callus. Similar structures were often named somatic embryos in the plant tissue culture literature, but they are more comparable to axillary buds. A coleoptile is not present. Both structures develop into **plants** on **regeneration** medium. Maturation of somatic embryos that are attached to callus aggregates is impaired in liquid culture; fewer embryos mature and regenerate probably because their cells have less cell to cell contact than those grown on solid medium. Somatic embryos unattached to callus tissue grow in suspension culture; they lack a scutellum or have only a rudimentary one, lack a coleoptile and leaf primordia. They **develop roots** but do not **develop** into plants in the media used in this study.

L25 ANSWER 30 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
DUPLICATE 9

ACCESSION NUMBER: 1994:15581 BIOSIS

DOCUMENT NUMBER: PREV199497029581

TITLE: Relations between the floristic composition of isolated young woods and their proximity to ancient woodland.

AUTHOR(S): Dzwonko, Zbigniew

CORPORATE SOURCE: Inst. Botany, Jagellonian Univ., Lubicz 46, 31-512 Krakow Poland

SOURCE: Journal of Vegetation Science, (1993) Vol. 4, No. 5, pp. 693-698.

ISSN: 1100-9233.

DOCUMENT TYPE: Article

LANGUAGE: English

AB Recent studies indicate that, in the present-day agricultural landscape, the floristic composition of young woodland communities can be fully developed if the woods are situated adjacent to ancient woodlands. Four 70-yr-old deciduous woods in the Carpathian foothills were examined in relation to three adjacent ancient oak-hornbeam and oak-pine woodlands, which are the nearest source of woodland species diaspores. On the basis

of data from 208 plots, the frequencies of various species groups in the field layer of the woods were analysed. The dependence of vegetation differentiation within the recent woods on (a) distance to the border with the ancient woodlands and (b) light intensity was examined by Partial Detrended Canonical Correspondence Analysis (DCCA). A significant relation between distance to ancient woodland and species composition was found for recent woods on rich brown soils. The vegetatively propagating species, myrmecochores and small autochores attained higher cover values near ancient woodland; endozoochores and anemochores were most abundant further away. Within recent, more open woods on poor podzolic and leached brown soils, colonization is strongly inhibited by dense growth of *Carex brizoides*; here, vegetation **regeneration** is much slower than in woods on rich soils much further away from the source of diaspores.

L25 ANSWER 31 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1994:116834 BIOSIS

DOCUMENT NUMBER: PREV199497129834

TITLE: **Plant regeneration** from protoplasts

derived from suspension cultures in *Leymus racemosus*.

AUTHOR(S): Zhang, Gen-Fa; Huang, Bai-Qu; Wang, Li; Luo, Xi-Ming;

Zheng, Xiao-Feng; He, Meng-Yuan; Hao, Shui

CORPORATE SOURCE: Inst. Genetics and Cytol., Northeast Normal Univ., Changchun 130024 China

SOURCE: Acta Botanica Sinica, (1993) Vol. 35, No. 6, pp. 422-428. ISSN: 0577-7496.

DOCUMENT TYPE: Article

LANGUAGE: Chinese

SUMMARY LANGUAGE: Chinese; English

AB Calli initiated from mature embryos of *Leymus racemosus* (Lam.) Tzvel.=*L. giganteus* were transferred onto the AA and DM media to produce friable embryogenic callus, from which embryogenic suspension cultures were established. Protoplasts were isolated from the embryogenic suspension cultures and were cultured either in thin-layer liquid medium or in double-layer (a-gar/liquid) medium. When visible calli were formed they were transferred onto the NBI agar medium or into the MBL liquid medium for further proliferation. These calli were transferred onto differentiation media of NBII and NR, where green spots were **developed**. Plants with both **shoots** and **roots** can be recovered from these green spots on MS II medium containing 0.5 mg/L NAA. The results showed that the Km8p basal medium was favorable to the culture of *L. racemosus* protoplasts during the early stages of culture. In addition, the composition of the media added to the cultures had a marked influence on the growth of protoplasts, indicating that the nutritional requirements in this plant were different at various stages of protoplast growth and differentiation.

L25 ANSWER 32 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1994:166616 BIOSIS

DOCUMENT NUMBER: PREV199497179616

TITLE: Callus induction and **plant regeneration** in *Vetiveria zizanioides*.

AUTHOR(S): Mucciarelli, Marco; Gallino, Marisa; Scannerini, Silvano; Maffei, Massimo (1)

CORPORATE SOURCE: (1) Dep. Plant Biol., Univ. Torino, Viale P.A. Mattioli 25, I-10125 Turin Italy

SOURCE: Plant Cell Tissue and Organ Culture, (1993) Vol. 35, No. 3, pp. 267-271. ISSN: 0167-6357.

DOCUMENT TYPE: Article

LANGUAGE: English

AB Callus induction was obtained from basal parts of *Vetiveria zizanioides* Stapf. leaves cultured on Murashige and Skoog (MS) medium supplemented with 9.0  $\mu$ M 2,4-dichlorophenoxyacetic acid (2,4-D), 5.7  $\mu$ M indoleacetic acid (IAA) and 4.6  $\mu$ M kinetin. Calli were maintained on MS medium with the addition of 0.9  $\mu$ M 2,4-D and 2.3  $\mu$ M kinetin. Shoot formation was obtained from fast growing 14-day-old callus on the same basal medium supplemented with 0.9  $\mu$ M 2,4-D and 9.3  $\mu$ M kinetin. Embryo-like structures were observed. When transferred to basal medium, **shoots** readily **developed roots**. Fully **developed regenerated plants** were then successfully established in soil.

L25 ANSWER 33 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1993:437710 BIOSIS

DOCUMENT NUMBER: PREV199396092335

TITLE: **Regeneration** from intact and sectioned immature embryos of barley (*Hordeum vulgare* L.): The scutellum exhibits an apico-basal gradient of embryogenic capacity.

AUTHOR(S): Golds, Timothy James; Babczinsky, Jutta; Koop, Hans-Ulrich (1)

CORPORATE SOURCE: (1) Lab. Plant Cell Biol. Cell Culture, Botanical Inst., Univ. Munich, Menzinger Strasse 67, W 8000 Munchen 19 Germany

SOURCE: Plant Science (Limerick), (1993) Vol. 90, No. 2, pp. 211-218.

ISSN: 0168-9452.

DOCUMENT TYPE: Article

LANGUAGE: English

AB Immature zygotic embryos from spring barley cv. Dissa were used to induce somatic embryogenesis. Up to 158 germinated **somatic embryos** could be recovered per plated zygotic embryo. Critical factors for obtaining a high yield of **regenerations** were the size of the explant, the level of 2,4-D used for **callus** induction and the careful division of **callus** at each subculture. Use of microsections of immature embryos as explants revealed a pronounced gradient of **callus** formation and embryogenic response across the scutellum. Sections from the scutellar tissue at the coleoptilar end of the embryo gave the most **callus** and were highly embryogenic. The **regeneration** response of sectioned explants was comparable to that recovered from intact embryos of similar size.

L25 ANSWER 34 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1992:466090 BIOSIS

DOCUMENT NUMBER: BR43:87440

TITLE: CLEAR-FELLING DUNE PLANTATIONS STUDIES IN VEGETATION RECOVERY.

AUTHOR(S): STURGESS P

CORPORATE SOURCE: DEP. ENVIRONMENTAL EVOLUTIONARY BIOLOGY, UNIVERSITY LIVERPOOL, U.K.

SOURCE: CARTER, R. W. G., T. G. F. CURTIS AND M. J. SHEEHY-SKEFFINGTON (ED.). COASTAL DUNES: GEOMORPHOLOGY, ECOLOGY AND MANAGEMENT FOR CONSERVATION; THIRD EUROPEAN DUNE CONGRESS, GALWAY, IRELAND, JUNE 17-21, 1992. XI+533P. A. A. BALKEMA: ROTTERDAM, NETHERLANDS; BROOKFIELD, VERMONT, USA. ILLUS. MAPS, (1992) 0 (0), 339-349. ISBN: 90-5410-058-3.

DOCUMENT TYPE: Conference

FILE SEGMENT: BR; OLD

Ibrahim 10/069,098

LANGUAGE: English

L25 ANSWER 35 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1991:242093 HCAPLUS

DOCUMENT NUMBER: 114:242093

TITLE: Methods and compositions for the production of stably transformed, fertile **monocotyledonous** plants and cells

INVENTOR(S): Adams, Thomas R.; Adams, Whitney R., Jr.; Chambers, Sheryl A.; Daines, Richard J.; Gordon-Kamm, William J.; Kautsch, Albert P.; Krueger, Roger W.; Lemaux, Peggy G.; Mackey, Catherine J.; et al.

PATENT ASSIGNEE(S): DeKalb Plant Genetics, USA

SOURCE: PCT Int. Appl., 110 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 8

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9102071	A2	19910221	WO 1990-US4462	19900808
WO 9102071	A3	19920514		
W:	AT, AU, BB, BG, BR, CA, CH, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MC, MG, MW, NL, NO, RO, SD, SE, SU			
RW:	AT, BE, BF, BJ, CF, CG, CH, CM, DE, DK, ES, FR, GA, GB, IT, LU, ML, MR, NL, SE, SN, TD, TG			
CA 2064761	AA	19910210	CA 1990-2064761	19900808
AU 9062903	A1	19910311	AU 1990-62903	19900808
AU 644097	B2	19931202		
EP 485506	A1	19920520	EP 1990-912722	19900808
EP 485506	B1	19971112		
R:	AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, SE			
BR 9007588	A	19920630	BR 1990-7588	19900808
HU 60781	A2	19921028	HU 1992-394	19900808
JP 05501352	T2	19930318	JP 1990-512239	19900808
AT 160174	E	19971115	AT 1990-912722	19900808
EP 814166	A2	19971229	EP 1997-108223	19900808
EP 814166	A3	19980513		
R:	AT, BE, CH, DE, DK, ES, FR, GB, IT, LI, LU, NL, SE			
ES 2110417	T3	19980216	ES 1990-912722	19900808
US 5874265	A	19990223	US 1995-446931	19950523
US 5919675	A	19990706	US 1995-446933	19950523
US 5969213	A	19991019	US 1995-446930	19950523
US 6399861	B1	20020604	US 1995-447985	19950523
PRIORITY APPLN. INFO.:			US 1989-392176	A 19890809
			US 1990-513298	A 19900417
			EP 1990-912722	A3 19900808
			WO 1990-US4462	A 19900808
			US 1990-565844	A1 19900809
			US 1993-113561	A3 19930825
			US 1994-233067	A1 19940426
AB	A method for producing fertile, transgenic <b>monocotyledonous</b> plants after introduction of transforming DNA into plant tissue is described. The recipient cells may be callus, gametic, or meristematic cells, or embryogenic cells grown in suspension culture. The transformed cells are cultured in a medium contg. an embryogenesis-promoting hormone until embryogenic callus tissue forms; the callus is transferred to a			

medium including a tissue organization promoting hormone; the resulting cells are subcultured in a medium without these hormones to allow for **shoot** elongation or **root development**; and these cells are transferred to a minimal medium (e.g. Clark's medium) to allow hardening of the plant. Fertile, transgenic maize plants expressing the bar gene were prep'd. by this method.

L25 ANSWER 36 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 1990:282776 BIOSIS

DOCUMENT NUMBER: BA90:13622

TITLE: DIFFERENTIAL RESPONSES TO SALINITY HELP EXPLAIN THE REPLACEMENT OF NATIVE JUNCUS-KRAUSSII BY TYPHA-ORIENTALIS IN WESTERN AUSTRALIAN AUSTRALIA SALT MARSHES.

AUTHOR(S): ZEDLER J B; PALING E; MCCOMB A

CORPORATE SOURCE: BIOL. DEP., SAN DIEGO STATE UNIV., SAN DIEGO, CALIF. 92182-0057, USA.

SOURCE: AUST J ECOL, (1990) 15 (1), 57-72.  
CODEN: AJECDQ. ISSN: 0307-692X.

FILE SEGMENT: BA; OLD

LANGUAGE: English

AB The influence of salinity on *Typha orientalis* and *Juncus kraussii* was documented in experiments on germination of seeds and on growth of seedlings and adult, rhizome-bearing plants. *Juncus* was more salt-tolerant than *Typha* at all three life-history stages, but salt tolerance increased with plant age for both species. Although seeds of both species germinated at 0 and 5 ppt, the germination data overestimated salt tolerance for *Typha*. Only the newly emerged seedlings of *Juncus* were capable of growth after removal from the 5 ppt NaCl solution to fresh water. *Typha* seedlings that initiated growth at 0 ppt grew well at 5 ppt but not at 10 ppt, while *Juncus* seedlings were tolerant of 10 ppt. Although the 20 ppt treatment caused high mortality of *Juncus* seedlings, the 10 ppt treatment mainly reduced growth. Adult plants of *Typha*, which were collected from the field, survived the 20 ppt treatment, while adult *Juncus* survived the 40 ppt treatment. The presence of salt (10-40 ppt) shortened the growing season for adult, rhizome-bearing plants of both *Juncus* and *Typha*, with a lower maximum and earlier peak in total leaf length and maximum leaf number. Thus, the greater biomass in fresh water was achieved primarily through a longer growth period, rather than a greatly accelerated growth rate. Interactions between the two species were explored in mixed-species culture of both seedlings and adult rhizome-bearing plants. Interspecific interactions were present at low salinity, but results differed for seedlings and adult plants. *Typha* seedlings failed to outgrow *Juncus* seedlings (at 5 ppt) but adult plants of *Typha* outgrew *Juncus* (at 0 ppt). Relative yields (biomass in mixed/pure pots) for *Juncus* and *Typha* seedlings were 0.85 and 0.26 at 5 ppt. Relative yields of adult plants were 0.24 for *Juncus* and 1.20 for *Typha* at 0 ppt. For both seedlings and adults, the species that ultimately dominated the mixed-species pots produced just as much total biomass as in pure-species pots even though initial planting density was half as high. Extrapolating findings to the field situation, it appears that **Typha** has a narrow **regeneration** niche. The indication is that **Typha** could invade *Juncus* stands only following salinity reduction (allowing seed germination and early seedling growth) and after disturbance disrupts the native vegetation. The combined conditions of prolonged low salinity and open habitat occur where street drains are cut through the salt marsh. The probability of *Typha* becoming established would be highest in such areas. Vegetative expansion would follow with continued freshwater influx, as rhizome-bearing plants gain an interspecific advantage.

L25 ANSWER 37 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 1991:270400 BIOSIS  
DOCUMENT NUMBER: BA92:3015  
TITLE: CLASSIFICATION AND MAPPING OF SAND GRASSLAND COMMUNITIES ON  
A PROTECTED AREA IN EASTERN HUNGARY.  
AUTHOR(S): NAGY M; PAPP M; TOTHMERESZ B; PRECSENYI I  
CORPORATE SOURCE: DEP. BOTANY, L. KOSSUTH UNIVERSITY, H-4010 DEBRECEN, HUNG.  
SOURCE: ACTA BIOL DEBRECINA, (1990) 0 (SUPPL ), 25-34.  
CODEN: ABIDAO. ISSN: 0567-7327.  
FILE SEGMENT: BA; OLD  
LANGUAGE: English

AB Investigations were carried out on the South-East part of Hungary, on a protected area (Bagamer). The area was grazed by cattle and sheep; and geese were kept in certain places. Thus, on a relatively small area all steps of the acid sand-soil succession occur together and are represented by differently degraded stages. A vegetation map of the area was plotted; the xerophilous communities were registered and identified. The relevés were analysed by multivariate statistical methods; cluster analysis and non-metric multidimensional scaling were also used. Our result suggests the following community types: *Brometum tectorum*, *Descurainietum sophiae*, *Festuco vaginatae-Corynephorretum*, *Astragalo-Festucetum sulcatae*, and *Potentillo-Festucetum pseudovinae* with three facies (*Poa bulbosa*, *Cynodon dactylon*, *Carex supina*). The anthropogenic effects, moderate cattle and sheep grazing did not cause a high damage in the grassland diversity. Because of the microreliefs and the high mosaic vegetation most of the species persisted, only the ratios were changed. These patches were able to regenerate easily. The extension of the *Descuraninietum sophiae* community indicates that the effect of geese was more drastic. The species pool of these areas became very poor and regeneration took place through different types of weed communities despite the fact that these were relatively small patches surrounded by undisturbed, natural communities.

L25 ANSWER 38 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 1989:281817 BIOSIS  
DOCUMENT NUMBER: BR37:6814  
TITLE: PATTERN AND POPULATION DYNAMICS IN PATCHY COMMUNITIES ON A MARITIME ROCK OUTCROP.  
AUTHOR(S): OHSAWA M; YAMANE M  
CORPORATE SOURCE: LAB. ECOL., FAC. SCI., CHIBA UNIV., YAYOICHO, CHIBA 260, JAPAN.  
SOURCE: DURING, H. J., M. J. A. WERGER AND H. J. WILLEMS (ED.). DIVERSITY AND PATTERN IN PLANT COMMUNITIES; INTERNATIONAL SYMPOSIUM ON VEGETATIONAL STRUCTURE, WOUDSCHOTEN, UTRECHT, NETHERLANDS, JULY 14-18, 1987. VIII+278P. SPB ACADEMIC PUBLISHING BV: THE HAGUE, NETHERLANDS. ILLUS. MAPS. PAPER, (1988) 0 (0), 209-220.  
ISBN: 90-5103-021-5.  
FILE SEGMENT: BR; OLD  
LANGUAGE: English

L25 ANSWER 39 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 1989:134536 BIOSIS  
DOCUMENT NUMBER: BA87:69189  
TITLE: VEGETATION DEVELOPMENT OF FORMER PEAT MINING AREAS IN THE HIGH MOORS OF THE BAVARIAN ALPINE FOOTHILLS WEST GERMANY.  
AUTHOR(S): POSCHLOD P  
CORPORATE SOURCE: LEHRGEBIET GEOBOT., LEHRSTUHL LANDSCHAFTSOEKOL., TU MUENCHEN-WEIHENSTEPHAN, 8050 FREISING 12.  
SOURCE: TUENXENIA, (1988) 0 (8), 31-54.

CODEN: TUEXDZ.

FILE SEGMENT: BA; OLD

LANGUAGE: German

AB Vegetation development in two differently mined peat areas is presented. Peat scratching in the Wendlinger Filz was used to win peat dust as a litter for cattle or for horticultural purposes. After drainage of the mire lots, the upper rooted layer ("Bunkerde") was removed. If frozen during the next winter, it could be used for litter. After removing the "Bunkerde", peat was extracted by hand or by machines. Vegetation development after peat mining began on bare soil with the invasion of generative and vegetative propagules from outside. Peat cutting in the Wieninger Filz was used to win peat for fuel. After drainage of the mire lots, the "Bunkerde" was removed and filled in formerly mined areas. Then peat was cut by hand or by machines. Vegetation development started mainly from the potential of whole plants or generative and vegetative propagules in the "Bunkerde". Vegetation stages on formerly scratched areas are mostly dominated by "one species" stages. These species are successful either in generative (*Eriophorum vaginatum*, *Calluna vulgaris*, *Drosera* ssp.) or vegetative dispersal (*Rhynchospora alba*, *Carex rostrata*, *Eriophorum angustifolium*, *Phragmites communis*) or in both (*Juncus effusus*). The direction of vegetation development depended on the composition of the remaining peat, mean water level and minerotrophy of the water. Regeneration in the sense of beginning peat moss growth could be observed only on these lots, where water level was above ground throughout the year (here *Sphagnum cuspidatum*), because former drainage got out of function. Vegetation stages on formerly cut areas show a higher diversity than on scratched areas. The direction of vegetation development depended mainly on the composition of the "Bunkerde", but on mean water level and minerotrophy of the water too. Regeneration could be observed on all lots with a relatively high water level, where peat was cut "under water" or drainage ditches were dammed up or got out of function. Requirement was that the "Bunkerde" contained whole plants or generative or vegetative propagules of the corresponding species, above all peat mosses.

L25 ANSWER 40 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN

ACCESSION NUMBER: 1987:528463 HCAPLUS

DOCUMENT NUMBER: 107:128463

TITLE: Transient expression of electroporated DNA in monocotyledonous and dicotyledonous species

AUTHOR(S): Hauptmann, R. M.; Ozias-Akins, P.; Vasil, V.; Tabaeizadeh, Z.; Rogers, S. G.; Horsch, R. B.; Vasil, I. K.; Fraley, R. T.

CORPORATE SOURCE: Dep. Bot., Univ. Florida, Gainesville, FL, 32611, USA

SOURCE: Plant Cell Reports (1987), 6(4), 265-70

CODEN: PCRPD8; ISSN: 0721-7714

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Transient expression of electroporated DNA was monitored in protoplasts of several monocot and dicot species by assaying for expression of chimeric chloramphenicol acetyltransferase (CAT) gene constructions. Expression was obtained in the dicot species of *Daucus carota*, *Glycine max*, and *Petunia hybrida* and the monocot species of *Triticum monococcum*, *Pennisetum purpureum*, *Panicum maximum*, *Saccharum officinarum*, and a double cross, tri-specific hybrid between *P. purpureum*, *P. americanum*, and *P. squamulatum*. Recovery and viability of protoplasts after electroporation decreased with increasing voltages and capacitance, whereas CAT activity increased up to a crit. combination of voltage and capacitance beyond which the activity dramatically decreased. The optimal compromise between



DNA uptake and expression vs. cell survival was detd. for *D. carota* and applied successfully to the other species. Max. transient expression occurred 36 h after electroporation of *D. carota*. The potential for using this procedure to rapidly assay gene function in dicot and monocot cells and the application of this technique to obtain transformed cereals are discussed.

L25 ANSWER 41 OF 47 HCAPLUS COPYRIGHT 2003 ACS on STN DUPLICATE 10  
ACCESSION NUMBER: 1987:15831 HCAPLUS  
DOCUMENT NUMBER: 106:15831  
TITLE: Micropropagation of **Typha** species  
AUTHOR(S): Zimmerman, Elizabeth S.; Read, Paul E.  
CORPORATE SOURCE: Dep. Hortic. Sci. Landscape Archit., Univ. Minnesota,  
St. Paul, MN, 55108, USA  
SOURCE: HortScience (1986), 21(5), 1214-16  
CODEN: HJHSAR; ISSN: 0018-5345  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Three **Typha** species were micropropagated successfully using immature inflorescence segments as the explant. Plantlet prodn. via organogenesis was optimum when the explants were first placed on Linsmaier-Skoog (LS) medium + 5.0 mg/L 2,4-D to initiate **callus** prodn., and after 9.5 wk the **callus** was recultured on LS + 1.0 mg/L benzyladenine. Of 3 species tested, *T. glauca* produced **callus** and new shoots more readily than *T. latifolia* or *T. angustifolia*. As inflorescences matured, an increased level of an auxin-like plant growth regulator, picloram, was necessary for **callus** induction. Excision and sep. culture of green spots or clumps that formed on the calli enhanced shoot **regeneration** from the **callus**.

L25 ANSWER 42 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 1985:217800 BIOSIS  
DOCUMENT NUMBER: BR29:107796  
TITLE: USE OF ANTIBIOTICS IN **TYPHA-GLAUCA TISSUE CULTURE**.  
AUTHOR(S): CHARVAT I; TANG F; WU C; ZIMMERMAN E; READ P  
CORPORATE SOURCE: DEPARTMENT OF BOTANY, COLLEGE OF VETERINARY MEDICINE,  
UNIVERSITY OF MINNESOTA, ST. PAUL, MINN. 55108.  
SOURCE: ANNUAL MEETING OF THE BOTANICAL SOCIETY OF AMERICA,  
GAINESVILLE, FLA., USA, AUG. 11-15, 1985. AM J BOT, (1985)  
72 (6), 882.  
CODEN: AJBOAA. ISSN: 0002-9122.  
DOCUMENT TYPE: Conference  
FILE SEGMENT: BR; OLD  
LANGUAGE: English

L25 ANSWER 43 OF 47 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN  
ACCESSION NUMBER: 85:403066 SCISEARCH  
THE GENUINE ARTICLE: ALY75  
TITLE: USE OF ANTIBIOTICS IN **TYPHA TISSUE-CULTURE**  
AUTHOR: CHARVAT I (Reprint); TANG F; WU C C; ZIMMERMANN E; READ P  
CORPORATE SOURCE: UNIV MINNESOTA, COLL VET MED, DEPT BOT, ST PAUL, MN,  
55108; UNIV MINNESOTA, DEPT HORT SCI & LANDSCAPE  
ARCHITECTURE, ST PAUL, MN, 55108  
COUNTRY OF AUTHOR: USA  
SOURCE: AMERICAN JOURNAL OF BOTANY, (1985) Vol. 72, No. 6, pp. 882

DOCUMENT TYPE: Conference; Journal  
FILE SEGMENT: LIFE; AGRI  
LANGUAGE: ENGLISH  
REFERENCE COUNT: 1

L25 ANSWER 44 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 1985:360897 BIOSIS  
DOCUMENT NUMBER: BA80:30889  
TITLE: MULTIPLE SUCCESSIONAL PATHWAYS ON RECENTLY DISTURBED JACK  
PINE PINUS-BANKSIANA SITES IN MICHIGAN USA.  
AUTHOR(S): ABRAMS M D; SPRUGEL D G; DICKMANN D I  
CORPORATE SOURCE: DIV. BIOLOGY, KANSAS STATE UNIV., MANHATTAN, KS 66506.  
SOURCE: FOR ECOL MANAGE, (1985) 10 (1-2), 31-48.  
CODEN: FECMDW. ISSN: 0378-1127.

FILE SEGMENT: BA; OLD  
LANGUAGE: English

AB Jack pine communities in northern lower Michigan recently disturbed by clearcutting, deliberate burning, or wildfire were studied over 3 growing seasons, and were compared to undisturbed jack pine stands. Newly disturbed sites generally had more vascular plant species than mature forests. Many of these species did not persist, especially on burned sites, and species richness declined sharply the second year after fire. In several cases annual and biennial species dominated 1st-yr burns but were unimportant thereafter. Several pathways of early successional development were evident on the disturbed sites, which was facilitated by jack pine regeneration failure on all but one of the disturbed sites. Unburned clearcuts rapidly developed into Carex meadows, with few other species of any importance. This pathway was also followed on some deliberately-burned and wildfire sites. Other burned areas developed a stratified canopy of shrubs and early successional hardwoods, and were rich in species and high in cover. Stand replacement by jack pine occurred on one mature jack pine site burned by wildfire. Jack pine regeneration failure was attributed to numerous factors involving: loss due to fire and predation, and low germination and seedling survival due to inadequate seedbed, drought, competition, pathogens, grazing and high surface temperatures. Index of similarity comparisons showed that different sites of the same post-disturbance age were significantly ( $P < 0.01$ ) less similar in species composition than a single site sampled in 2 or 3 consecutive years. Post-disturbance age was not a particularly strong indicator of species composition on these sites, because each site had a different assemblage of species composition on these sites, because each site had a different assemblage of species (30-40% dissimilarity among sites of the same disturbance class and post-disturbance age). Therefore, the individualistic nature of each site, rather than age following disturbance, is the dominant aspect in understanding successional relationships in these communities.

L25 ANSWER 45 OF 47 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.  
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ACCESSION NUMBER: 83:141037 AGRICOLA  
DOCUMENT NUMBER: IND83116986  
TITLE: In vitro propagation of species for bioenergy  
plantations Salix, Alnus glutinosa, Alnus crispa,  
Alnus rubra, Typha latifolia, fuel sources.  
Plant tissue culture 1982 :  
proceedings, 5th International Congress of Plant  
Tissue and Cell Culture held at Tokyo and Lake

Yamanake, Japan, July 11-16, 1982 / edited by Akio Fujiwara.  
AUTHOR(S): Read, P.E.; Garton, S.; Louis, K.A.; Zimmermann, E.S.; Farnham, R.S.  
AVAILABILITY: DNAL (QK725.I49 1982)  
SOURCE: Plant Tissue Cult 1982, 1982? p. 757-758  
Publisher: Tokyo : Japanese Association for Plant Tissue Culture, 1982?.  
NOTE: Includes references.  
DOCUMENT TYPE: Article  
FILE SEGMENT: Non-U.S. Imprint other than FAO  
LANGUAGE: English

L25 ANSWER 46 OF 47 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN  
ACCESSION NUMBER: 1979:55517 BIOSIS  
DOCUMENT NUMBER: BR16:55517  
TITLE: CONTROL OF REED AND REED MACE STANDS BY CUTTING.  
AUTHOR(S): HUSAK S  
SOURCE: DYKYJOVA, DAGMAR AND JAN KVET (ED.). ECOLOGICAL STUDIES, ANALYSIS AND SYNTHESIS, VOL. 28. POND LITTORAL ECOSYSTEMS: STRUCTURE AND FUNCTIONING. METHODS AND RESULTS OF QUANTITATIVE ECOSYSTEM RESEARCH IN THE CZECHOSLOVAKIAN IBP (INTERNATIONAL BIOLOGICAL PROGRAMME) WETLAND PROJECT. XIV+464P. ILLUS. SPRINGER-VERLAG: NEW YORK, N.Y., USA; BERLIN, WEST GERMANY, (1978) 404-408.  
ISBN: 0-387-08569-6, 3-540-08569-6.  
FILE SEGMENT: BR; OLD  
LANGUAGE: Unavailable

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TITLE: ESTIMATION OF VIABLE SEED RESERVES IN SOIL UNDER A FOREST CANOPY BY FIELD EXPERIMENT.  
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AB The experiment was conducted in the Moscow region [USSR] in pine-spruce forest mixed with birch (climax forest type is green moss pine forest mixed with spruce). The upper soil layer with litter and living plants were removed from ten 1 .times. 1 m sample plots; after this all plants which appeared upon the same plots (separately from seeds and from vegetative organs) were recorded. Ten sample plots of the same size with undisturbed plant cover situated nearby served as control plots. Some species which were common on the control plots were absent upon experimental ones (*Vaccinium vitis-idaea*, *Trientalis europaea*). They did not reproduce by seeds because of absence of living seeds in the soil and vegetative regeneration did not occur either. Other plant species typical for the forest regenerated poorly on the experimental plots by seeds ( **Carex** *digitata*, *Melampyrum pratense*). Some species **regenerated** relatively well (*Calamagrostis drundinacea*, *Fragaria vesca*, *Luzula pilosa*, *Oxalis acetosella*, *Veronica officinalis*, *Viola canina*). Two herbaceous species not characteristic of the forest (*Carex pallescens*, *Luzula campestris*) were the most abundant ones upon the experimental plots; they grew in great quantities from seeds which survived in the forest soil.

Ibrahim 10/069,098